**Research article**

# Competency on transgender health issues among medical professionals before and after the medical conference on transgender physiology

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***(Received: February 2023 Revised: March 2023 Accepted: April 2023)***

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## ABSTRACT

**Introduction and Aim:** Transgender healthcare has emerged as an area of medicine that has been in the blind spot of most physicians for the last century. Medical professionals in India have been equally unaware of the health needs of the transgender community. The aim of the present study was to assess the competency and awareness regarding transgender health and related issues among medical professionals.

**Methodology:** A questionnaire was framed to assess awareness on social and medical issues faced by the transgender community containing 40 questions in yes or no format. 126 doctors filled the questionnaires and 58 of the respondents later attended a conference on Transgender health. Similar questionnaire was used to assess the improvement in knowledge after the conference.

**Results:** The result of the questionnaire score was analysed in percentage. The average percentage score of the initial 126 respondents was 51.58. Pre-conference percentage score was 51.33 and the post-conference was 61.67 among the 58 conference attendees, showing a significant increase in awareness after being exposed to an educational session.

**Conclusion:** There is a need for large-scale awareness programs and the implementation of trans-inclusive medical curriculum to improve the competency of medical professionals.

**Keywords:** Transgender health; medical professionals; awareness programs; LGBTQI health; medical curriculum.

## INTRODUCTION

In 2021, a worldwide survey collected data among 27 countries in which 2% of the respondents identified themselves as transgender, non-binary/non-conforming/gender-fluid, or in another way than male or female (1). In South Asian countries, such as India, Pakistan, Nepal, and Bangladesh the transgender population forms a considerable minority. According to the latest census report, the government of India estimates that about 4.8 million people recognize as transgender (2). In India the transgender community has been recognized under various regional nomenclatures, but none of which have encompassed the whole community. 'Transgender' is an umbrella term for people whose gender identity does not align with the sex assigned at birth (3). Due to the segregated practices transgender population faces pervasive and severe discrimination along with various social issues such as stigma, violence, and legal blockades due to which their rate of access to healthcare is lower than the general population (4). A study was conducted among a transgender population of nearly 6,500 people by The National Center for Transgender Equality and the National Gay and Lesbian Task Force in 2011, they found that the transgender population experienced high levels of discrimination in employment, housing, health care, education, legal systems, and even in their families (5).

Transgender individuals suffer significant health issues in multiple arenas (6). The conventional medical curriculum which trains the healthcare professionals does not provide essential details to the medical students who later become health care providers. So, very few physicians have the requisite knowledge and comfort level to treat the transgender patients. There is a two-gender approach that has been traditionally practised in medicine which excludes the transgender community. Because of this the clinicians are mostly ill-prepared and unaware of the needs of the transgender community (7, 8).

In the Indian context the medical education does not include enough information regarding the transgender community in the undergraduate and postgraduate levels, leaving our doctors out at sea when it comes to clinical knowledge in transgender health (9). The transgender patients themselves report that lack of proper, trained health care providers with expertise in transgender medicine (7). Although clinical guidelines on best practices and standards of care for Transgender patients have been formed by World Professional Association on Transgender Health (WPATH), it is yet to be adapted to the medical education and training currently available in India (10).

Studies conducted in the US and Canada have shown significant lack of clinical knowledge among Physicians and health services staff that leads to

inadequate care given to Transgender patients (7,11). There is a need for similar studies in India to understand the gaps in knowledge of practising physicians. Understanding the problem better will help us find targeted solutions as well and provide appropriate training to the medical professionals.

The purpose of the study was to assess the awareness on health care issues of transgender community among medical practitioners and to identify the effectiveness of intervention (Medical conference) in creating awareness among the medical professionals.

## METHODOLOGY

The observational study commenced after approval from the Institute Ethical Committee, DSMCH. Ethical practices for human/patient trials as prescribed by the Helsinki Declaration were followed. Informed consent was taken from all the participants and the personal details of the participants were not stored or displayed in the process of the study.

### Study questionnaire

A questionnaire was framed based on the available publications and the health care practices in India. The questionnaire contained 40 questions divided into 3 sections, social awareness, medical knowledge and attitude and perception towards transgender community. Each question had 3 options (yes/no/maybe) as answers and the volunteers were asked to respond to the statements in the question. The questionnaire was framed online in Google form format and the volunteers were invited to fill the form. Each question was given one point score for a positive response with regards to awareness on Transgender Health. For the negatively framed questions one point was given for 'no' as answer.

### Study participants

The volunteers for the study were recruited randomly form among the doctors in the peer groups of the investigators and advertising in the community social media. Informed consent was obtained in the google form itself before proceeding to information related to the study.126 volunteers responded to the initial assessment by copyrighted questionnaire on awareness about Transgender healthcare among medical professionals.

### Awareness program (National conference on transgender physiology)

An online medical conference on Transgender medicine was conducted by the investigators with subject experts. 58 out of the 126 volunteers attended the conference. The conference titled transgender physiology included topics such as Introduction to Transgender Health, History, Terms & Concepts, Transgender Anatomy, Genetics, Reproductive Physiology, Transgender Brain, Physiology behind gender incongruence, Research in Transgender Medicine, Sexuality, Mental health issues, public health issues, Reproductive health and concerns of Transgender Individuals, managing a Transgender Patient, Panel Discussion on 'Teaching and Learning Transgender Medicine'. A similar questionnaire was used for the assessment done immediately after the conference to assess the improvement in knowledge. The post assessment questionnaire includes only the social knowledge and medical knowledge sections of the initial questionnaire with a total of 26 questions.

### Data analysis

The data was analysed in Microsoft Excel 2010, IBM SPSS 20 and JASP.0.14 applications. The final scores were tested for normality using the Shapiro-Wilk test and showed normal distribution across. Hence parametric tests were used to test for significance. Crohnbach's Alpha test used for the Questionnaire validity. Chi square tests were used to look for age group dependant or experience dependent variation in the awareness on transgender health.

## RESULTS

The participant demographic profile is recorded in Table 1 for the 126 study participants and the 58 of whom attended the Transgender Physiology conference.

**Table 1:** Demographic profile of participants

| **Groups** | | **Number of participants** | |
|---|---|---|---|
| | | **Out of 126** | **Out of 58 who attended conference** |
| Age-group | 20-30 | 55 | 27 |
| | 30-40 | 48 | 22 |
| | 40-50 | 12 | 6 |
| | 50-60 | 7 | 3 |
| | above 60 | 4 | 1 |
| Years of experience | 1-5 | 26 | 15 |
| | 6-15 | 78 | 35 |
| | 15-25 | 14 | 7 |
| | >25 | 8 | 1 |

**Table 2:** Descriptive statistics for 126 volunteers for their total score on awareness questionnaire out of 40

| **Mean** | **20.63492** |
|---|---|
| 75th Percentile | 25 |
| Median | 20 |
| Maximum | 37 |
| Minimum | 02 |

Reliability analysis was done on the questions in the main questionnaire from the responses of 126 participants using Cronbach's alpha and was found to be valid. The overall mean score for 126 participants of the study is 20.63 out of 40 and mean percentage score is 51.58. Median score is 20 with a maximum score of 37 (Table 2).

Chi square test was done to look for differences among volunteers whose answer corresponds to knowledge in the area of transgender health and those who do not. The test showed a significant difference in questions tracking knowledge in the field of transgender medicine (Table 3).

**Table 3:** Chi Square Test analysis for data of 126 participants

| | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 |
|---|---|---|---|---|---|---|---|---|
| Chi-Square | 103.143[a] | .032[a] | 1.143[a] | 32.508[a] | 2.032[a] | 2.032[a] | 6.222[a] | .508[a] |
| df | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Asymp. Sig. | .000 | .859 | .285 | .000 | .154 | .154 | .013 | .476 |

| | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Chi-Square | 24.889[a] | 8.127[a] | 36.698[a] | 38.889[a] | .794[a] | 34.571[a] | 16.794[a] | 23.143[a] | 23.143[a] | 2.032[a] |
| df | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Asymp. Sig. | .000 | .004 | .000 | .000 | .373 | .000 | .000 | .000 | .000 | .154 |

| | B11 | B12 | B13 | B14 | B15 | B16 | B17 |
|---|---|---|---|---|---|---|---|
| Chi-Square | 15.365[a] | 2.032[a] | 36.698[a] | 7.143[a] | 3.175[a] | 6.222[a] | 3.841[a] |
| df | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Asymp. Sig. | .000 | .154 | .000 | .008 | .075 | .013 | .050 |

| | C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 |
|---|---|---|---|---|---|---|---|---|---|
| Chi-Square | 64.286[a] | 48.286[a] | 76.222[a] | 79.365[a] | 76.222[a] | 53.365[a] | 70.127[a] | 76.222[a] | 103.143[a] |
| df | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Asymp. Sig. | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 |

| | C10 | C11 | C12 | C13 | C14 | C15 |
|---|---|---|---|---|---|---|
| Chi-Square | .286[a] | 45.841[a] | 89.175[a] | 32.508[a] | 11.460[a] | 30.508[a] |
| df | 1 | 1 | 1 | 1 | 1 | 1 |
| Asymp. Sig. | .593 | .000 | .000 | .000 | .001 | .000 |

Note: Questions are denoted by A, B or C alphabets for the section they belong to and followed by a number denoting the position of the question in the said section. Significant difference noted in questions of B section, that is, knowledge and experience in Transgender health care as compared to questions in social knowledge (Section A) and Attitude and perceptions (Section C)

**Table 4:** Average scores of 126 participants for each question

| A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | |
|---|---|---|---|---|---|---|---|---|
| 0.047 | 0.535 | 0.452 | 0.753 | 0.563 | 0.563 | 0.388 | 0.531 | |
| B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 |
| 0.277 | 0.626 | 0.230 | 0.222 | 0.460 | 0.238 | 0.317 | 0.285 | 0.285 |
| B10 | B11 | B12 | B13 | B14 | B15 | B16 | B17 | |
| 0.563 | 0.325 | 0.436 | 0.230 | 0.380 | 0.579 | 0.611 | 0.412 | |

| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 |
|---|---|---|---|---|---|---|---|
| 0.857 | 0.190 | 0.888 | 0.896 | 0.888 | 0.825 | 0.873 | 0.888 |
| C9 | C10 | C11 | C12 | C13 | C14 | C15 | |
| 0.952 | 0.523 | 0.801 | 0.920 | 0.246 | 0.349 | 0.253 | |

Note: Alphabets A, B and C denotes sections on social knowledge, medical knowledge, and attitudes towards transgender community respectively. Numbers A1, A2 etc., is placeholder for first question in section A, second question in Section A and so on. Section B shows lower scores than section A and section C, implying lack of medical knowledge compared to knowledge on social issues or attitude and perception towards transgender individuals.

The average score for each question was also looked into. Lowest number scores were observed in questions such as [Have you ever been involved in the treatment of a transgender patient] [Are you aware of the treatment options available to transgender individuals for improving their reproductive health] [Are children capable of identifying themselves as transgender] [Have you ever had a friend or family member who is belongs to transgender community] [If you were to know that a patient is Transgender do you need to alter the treatment or management that was previously planned] while highest scores were observed in questions concerning the attitude and perception of issues such as [Transgender patients deserve the same level of quality care from medical institutions as cisgender patients]. [Do you believe the undergraduate medical education should involve

information about physiology and medical issues of Transgender individuals] (Table 4).

Out of the 126 volunteers, 58 doctors participated in a National Conference on Transgender Physiology following which a post- assessment was done using a similar questionnaire with 26 of the questions out of the original 40. The excluded questions were those of perception and attitude towards the trans community. The total percentage score improved from a mean of 51.33 to 61.67 after the conference. Comparing the data from only the 26 questions before and after the conference, the mean score increased from 9.31 to 14.7, while the mean percentage score of 22 questions improved from 35.70 to 67.2 percentage. Chi square test was also done to compare average percentage scores in age group wise and experience as a medical professional (in years) but did not show any significant difference between age groups or experience of the participants (Table 5).

**Table 5:** Descriptive statistics for 58 volunteers pre and post conference, for their awareness questionnaire score out of 26

| Variables | Pre conference | Post conference |
|---|---|---|
| Mean | 9.310345 | 14.7931 |
| Median | 9 | 16 |
| 1st Quartile | 7 | 13.25 |
| 3rd Quartile | 11 | 17 |
| 75th Percentile | 11 | 17 |
| Maximum | 18 | 20 |
| Minimum | 2 | 4 |

## DISCUSSION

The preliminary data of 126 participants show that out of a total score of 40 average scores remain at 20.63. This indicates a large gap in the awareness of medical professionals regarding issues of transgender health when almost 50% of the questions could not be correctly answered. When we further look at data from individual questions, most of the participants could not answer the questions of general social awareness and medical knowledge of transgender medicine, while their attitude and perception regarding the needs of transgender community is showing better scores. This more than anything underscores the problem of the lack of awareness about the issue starting from school level to medical colleges. Indian undergraduate medical curriculum does not include any information regarding Transgender health and that has put our doctors at a great disadvantage in understanding and treating transgender patients. Even in postgraduate curriculum the subject isn't taught in most of the disciplines as it should be, leading to medical practitioners unaware of the subject completely.

The analysis of the 58 volunteers who participated in pre as well as post awareness after attending a medical conference on the issue of Transgender health improved significantly. Out of a total score of 22, pre-conference mean score was 9.3 while post conference mean scores improved to 14.7. Showing a significant improvement after an educational program. The potential for improvement is evident from these statistics, while all that is lacking is the initiative and the resources required. Once we start introducing programs to improve knowledge and awareness on the topic there will be drastic improvement in the necessary care, we are able to offer the transgender community.

Question-wise analysis of data has shown that while knowledge on medical questions such as gender affirmation options is extremely poor among the volunteers, the questions such as requirement for health initiatives and awareness programs showed higher scores. This implies the willingness of our medical fraternity to learn and evolve when the opportunity is presented to them. So, the lack of knowledge is clearly a lack of proper education during graduate and post-graduate courses and lack of general training or awareness programs in the field.

Previous studies on the topic of awareness in transgender health have found results like that of the present study (7, 12). Multiple studies have concluded from their findings that Transgender inclusive medical education is lacking in the traditional curriculum, and this has paved the way for incomplete knowledge and discriminatory practices among medical professionals (13-16).

### Limitations

While the intervention in the form of the national conference on transgender physiology showed improvement in the scores of the 58 participants from 35% to 67% even though there is no accounting for how many of the participants listened to all the sessions of the 2-day conference. Targeted short term programmes with smaller audiences such as workshops and inclusion of topics in medical curriculum and the competency tests and assessments may show better improvement of scores. There could have been bias in the participation in the conference itself as the individuals with interest towards the topic and better general attitude towards the Transgender community are more likely to voluntarily attend. This problem could only be tackled at the root, i.e., in the undergraduate medical curriculum. By informing the young students of the field of transgender health, we make them more open towards learning further about such topics.

One of the major roadblocks to achieving proper training and education for all medical professionals in this field is the fact that there is a huge lacuna in terms of defining best practices in transgender health (17). While organizations such as WPATH and several other Transgender friendly doctors' associations have attempted to create a guideline for the treatment of transgender patients (10), the obvious problem anyone can observe is the lack of data. From the time gender

affirmation procedures started till now there is no clear evidence of the superiority of procedures (18). To date the surgeries or treatment of many transgender individuals go wrong and this prevents them from trusting the healthcare establishment (19,20). While improving the education of doctors it is imperative to look for solutions to the health care questions as well.

## CONCLUSION

There is a need for awareness programs among doctors to improve their general understanding of transgender medicine. The medical curriculum must be revamped to train budding healthcare providers. For the practising physicians, certifiable interventions such as CME, Conferences, workshops, and sensitisation programs on LGBTQI/Transgender health care must be made available.

## ACKNOWLEDGMENT

We acknowledge all the study participants who enthusiastically participated in the study.

## CONFLICT OF INTEREST

Nil.

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